II. RESPONSE TO THE OFFICE ACTION DATED SEPTEMBER 20, 2005

A. The Status of the Claims

Claims 1, 17 and 48-57 were pending at the time the Action dated September 20, 2005 was mailed. Claims 1, 17, 48, 50 and 52 have been amended and new claim 58 has been added. Claims 1 and 17 were amended to correct typographical and grammatical errors. Support for all amendments can be found throughout the specification and the originally filed claims, including Figure 36 and page 39, lines 25-31, through page 40, lines 1-6, and specification citations in the remarks below. In view of these facts, these types of amendments do not in anyway affect the scope of the claims or range of equivalents to which the elements in the claims are entitled. No new matter is added via these amendments.

Accordingly, claims 1, 17 and 48-57 are currently pending.

B. Objection to the Abstract of the Disclosure

The Action objects to the abstract of the disclosure because it was not presented in proper domestic form. Pursuant to *MPEP* § 608.01(b), Applicants have amended the specification to insert the abstract at the end of the specification. Applicants believe this amendment overcomes the objection to the abstract of the disclosure, and respectfully requests the objection be withdrawn.

C. Double Patenting Rejection

Claims 1, 17 and 48-51 stand rejected under the doctrine of obviousness type double patenting in view of U.S. Patent No. 6,673,907. Upon indication of otherwise allowable subject matter, Applicants will file a terminal disclaimer to overcome this rejection.

D. The Rejection of Claims 1, 17 and 48-57 Under 35 U.S.C. § 112, first paragraph, is Overcome

The Action rejects claims 1, 17 and 48-57 under 35 U.S.C. § 112, first paragraph, for lack of enablement. The Action states that "the specification, while being enabled for R1 representing an alkyl chain, a (-$COCH_2R_{13}$) group or (-$C(OH)$-CH_2R_{13}), does not reasonably provide enablement for R1 representing a nucleic acid intercalate or a topoisomerase inhibitor." The Action, page 2. The Action reasons that "[i]t would take an undue amount of experimentation to determine which specific nucleic acid intercalators or topoisomerase inhibitors will result in a compound having the desired activity." *Id.* at 4.

Applicants traverse. Claims 1, 17 and 48-57, as originally filed, are enabled by the present specification. A person reasonably skilled in the art could make or use the invention when "R^1 denotes any suitable group or combination of groups that form but are not limited to a nucleic acid intercalator or binding compound; a topoisomerase inhibitor, including but not limited to, an alkyl chain, a (-$COCH^2R^{13}$) group; or a ($C(OH)$-CH^2R^{13})..." from the disclosures in the specification coupled with the information known in the art without undue experimentation. *See United States v. Telectronics, Inc.*, 857 F.2d 778, 785 (Fed. Cir. 1988).

However, to further the prosecution in this case, claims 1 and 17 now read, in part, "wherein, R^1 is an alkyl chain, a (-$COCH_2R^{13}$) group, or a ($C(OH)$-CH_2R^{13}) group...." In light of present claims 1 and 17, Applicants believe the present enablement rejection is rendered moot. Applicants note that although phrases relating to nucleic acid intercalators, binding compounds and topoisomerase inhibitors have been removed, this does not mean that some or all of the claimed compounds do not act as nucleic acid intercalators, binding compounds, and/or topoisomerase inhibitors. Applicants do not disclaim in any way that any of the claimed

compounds may be nucleic acid intercalators, binding compounds, and/or topoisomerase inhibitors.

Accordingly, Applicants respectfully request that the rejection of claims 1 and 17 under 35 U.S.C. § 112, first paragraph, as being not enabled by the present specification be withdrawn.

E. The Rejection of Claims 52-57 Under 35 U.S.C. § 112, first paragraph, is Overcome

The Action rejects claims 52-57 under 35 U.S.C. § 112, first paragraph, for lack of enablement. The Action states that, while the specification is enabling for the treatment of cancer, it "does not reasonably provide enablement for preventing cancer." The Action, page 4.

Applicants traverse and point out that present claims 52-57 are drawn to treatment of cancer and therefore satisfy the enablement requirement of 35 U.S.C. § 112, first paragraph. Applicants note that anyone who employs any of the compounds or compositions of claims 52-57 for the prevention of cancer would infringe claims 1 and/or 17, the composition of matter claims. As such, the enablement rejection is overcome, and therefore respectfully request the rejection be withdrawn.

F. Claims 48, 50 and 52-57 Comply With the Written Description Requirement of 35 U.S.C. § 112, first paragraph

The Action rejects claims 48, 50 and 52-57 under 35 U.S.C. § 112, first paragraph, for failure to comply with the written description requirement. Specifically, the Action states that, "[t]he terminology 'wherein the –XAAR substituent is disubstituted, trisubstituted, tetrasubstituted or pentasubstituted' (claims 48 and 50), 'preventing cancer' (claims 52-57), preventing or treating in a patient breast cancer (claims 56-57), ['']lung cancer ovarian cancer, Hodgkin's disease, non-Hodgkin's lymphoma, acute leukemia or carcinoma of the testes['] (claim 56) is not disclosed or suggested by the application as originally filled [*sic*]." The Action, at page 6.

Applicants traverse. Claims 48 and 50 (as amended) and 52-57 comply with the written description requirement of 35 U.S.C. § 112, first paragraph.

1. Present claims 48 and 50 fully comply with the written description requirement of 35 U.S.C. § 112, first paragraph

Claims 48 and 50 currently recite that the "-XAAR substituent is disubstituted, trisubstituted, tetrasubstituted or pentasubstituted." To more accurately reflect the positioning of the substituents, Applicants have amended claims 48 and 50 to directly quote the language found in the specification—that it is the *aromatic ring* of the –XAAR group that may be disubstituted, trisubstituted, tetrasubstituted or pentasubstituted. See specification, page 8, at lines 24-25. The amended claims therefore comply with the written description requirement of 35 U.S.C. § 112, first paragraph, and Applicants therefore respectfully request this rejection be withdrawn.

2. Present claims 52-57 fully comply with the written description requirement of 35 U.S.C. § 112, first paragraph

The Action rejects claims 52-57 as lacking written description with respect to the phrase, "preventing cancer." The Action also rejects claims 56-57 for the same reason, particularly the phrase, "preventing or treating in a patient breast cancer." In the same vein, the Action rejects claim 56 for, Applicants presume, the same reason—the inclusion of "preventing cancer."[1] As described above, these claims no longer pertain to the prevention of cancer. The newly amended claims comply with the written description requirement of 35 U.S.C. § 112, second paragraph, and Applicants respectfully request the rejection be withdrawn.

[1] If the Examiner rejects claims 56-57 as lacking written description for the types of cancer listed, Applicants respectfully point to page 2 of the specification, lines 19-23; page 58, Example 4; page 67, lines 23-25; and the claims themselves (*see MPEP* § 2163, citing *In re Koller*, 613 F.2d 819, 204 USPQ 702 (CCPA 1980) (original claims constitute their own description)).

G. The Rejection of Claims 1, 17 and 48-57 Under 35 U.S.C. § 112, second paragraph, is Overcome

The Action rejects claims 1, 17 and 48-57 under 35 U.S.C .§ 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

Applicants traverse. Present claims 1, 17 and 48-57 are definite and satisfy all of the requirements of 35 U.S.C. § 112, second paragraph, as discussed in detail below.

1. Claims 1 and 17 (all occurrences) are definite

The Action contends that claims 1 and 17 (all occurrences) are indefinite because the use of the term "comprising" leaves the structural formulas of the compounds open-ended—i.e., "the scope of the invention cannot be determined." The Action, page 6.

Applicants traverse. Claims 1 and 17 satisfy all of the requirements of 35 U.S.C. § 112, second paragraph.

Applicants note that present claims 1 and 17 recite, in part, "A substituted anthracycline comprising the formula:..." These claims comply with all of the requirements set out in 35 U.S.C. § 112, second paragraph.

There is nothing indefinite about the use of the conjunction "comprising" in a patent claim. This word has a long-standing, well-understood meaning under black letter U.S. patent law. Specifically, the term "comprising" is inclusive or open-ended, and does not exclude additional, unrecited elements or method steps. *See, e.g., MPEP* § 2111.03, *Invitrogen Corp. v. Biocrest Mfg., L.P.*, 327 F.3d 1364, 1368, 66 USPQ2d 1631, 1634 (Fed. Cir. 2003). "Comprising" is a term of art used commonly used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim." *Genentech, Inc., v. Chiron Corp.*, 112 F.3d 495, 501, 42 USPQ2d 1608,

1613 (Fed. Cir. 1997). Thus, for example, the phrase and structure recited in claims 1 and 17, "A substituted anthracycline comprising the formula" contemplates the inclusion of additional, unrecited elements.

The test for indefiniteness under 35 U.S.C. § 112, second paragraph, is whether "those skilled in the art would understand what is claimed when the claim is read in light of the specification." *Orthokinetics, Inc., v. Safety Travel Chairs, Inc.,* 806 F.2d 1565, 1576, 1 USPQ2d 1081, 1088 (Fed Cir. 1986). Applicants assert that one of ordinary skill in the art would clearly understand that the term "comprising" in the claim language contemplates inclusion of additional unrecited elements, and that the term "comprising" does not render the claims indefinite.

According to *MPEP* § 2173.02, the Examiner's focus during examination of claims for compliance with the requirement for definiteness of 35 U.S.C. § 112, second paragraph, is whether the claim meet the threshold requirements of clarity and precision, and whether the claim apprises one of ordinary skill in the art of its scope. *MPEP* § 2173.02, citing *Solomon v. Kimberly-Clark Corp.*, 216 F.3d 1372, 1379, 22 USPQ2d 1279, 1283 (Fed. Cir. 2000). The claims at issue, by reciting "comprising," are sufficiently clear and precise to apprise one of ordinary skill in the art of the scope of the claims. The Examiner has presented no evidence to the contrary.

"Examiners are encouraged to suggest claim language to applicants to improve the clarity or precision of the language used, but should not reject claims or insist on their own preferences if other modes of expression selected by applicants satisfy the statutory requirement." *MPEP* § 2173.02. Use of the conjunction "comprising" in the claims at issue satisfies the statutory

requirement of 35 U.S.C. §112, second paragraph. Therefore, there is no need for alternative claim language.

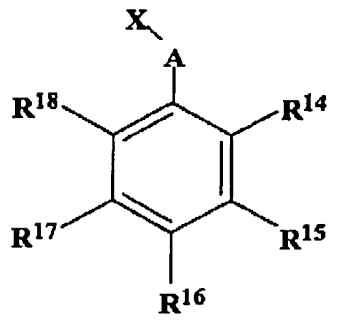
In view of the above, the Examiner has wholly failed to provide any evidence to support that one of ordinary skill in the art would not understand the metes and bounds of the claims. Therefore, it is requested that the rejection of claims 1 and 17 under 35 U.S.C. § 112, second paragraph, should be withdrawn.

2. Claims 48 and 50 are definite

The Action states that claims 48 and 50 are indefinite because the use of the terminology, "disubstituted, trisubstituted, tetrasubstituted, or pentasubstituted" does not set forth which substituents are included. The Action, page 6.

Applicants traverse. Present claims 48 and 50 satisfy all of the requirements of 35 U.S.C. § 112, second paragraph. As noted above, the present claims specifically indicate that it is the aromatic ring of the –XAAR group that is disubstituted, trisubstituted, tetrasubstituted, or pentasubstituted. The specification recites a variety of substituents which may be included:

> one of R^5 and R^6 is a X-alkyl-aromatic-ring (AAR) substituent such as -XAAR, wherein, A is an alkyl group and wherein, AR is an substituted phenyl ring; or a substituted five-member ring; or a heteroatomic five-member ring; or a heteroatomic six-member ring such as a pyridine ring; of the form;



> ; wherein, R^{14} -R^{18} are independently a (-H) group; a hydroxyl group (-OH); a methoxy group (-OCH_3); a nitro group (-NO_2), an amine group (-NH_2), a halide; an alkoxy group having 1-20 carbon atoms; an alkyl group having 1-20 carbon

> atoms; an aryl group having 1-20 carbon atoms; an alkyl-amino group; an alkyl-thio group; a cyano group (CN, SCN); an $-CO_2H$ group; an $-CO_2R$ group; and the aromatic ring may be disubstituted, trisubstituted, tetrasubstituted or pentasubstituted; and X is a -O, -N or -S, or -SO, or $-SO_2$ group; and A is $(CH_2)_n$ where n = 0,1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, wherein, if R^5 is a XAAR substituent R^6 is not and if R^6 is a XAAR substituent R^5 is not.

specification, page 8, lines 14-25, through page 9, lines 1-3 (emphasis added). This listing of substituents which may satisfy the "disubstituted, trisubstituted, tetrasubstituted, or pentasubstituted" claim language renders the claim definite under 35 U.S.C. § 112, second paragraph.

In light of amendments made to claims 48 and 50 to mimic language found in the specification, and the (non-limiting) listing of substituents set forth in the specification, Applicants respectfully request that the rejection of claims 48 and 50 as being indefinite be withdrawn.

3. Claims 49 and 51 are definite

The Action contends that claims 49 and 51 are indefinite because it is not clear whether claims 49 and 51 are compound or composition claims.

Applicants traverse. Present claims 49 and 51 satisfy all of the requirements of 35 U.S.C. § 112, second paragraph, because they particularly point out and distinctly claim what Applicants regard as the present invention.

Claims 49 and 51 recite, "The substituted anthracycline of claim [1 or 17], wherein the substituted anthracycline is formulated into a pharmaceutically acceptable carrier." Turning to the specification, page 18, lines 6-15, describe definitions of phrases used in this claim:

> The phrases "pharmaceutically or pharmacologically acceptable" refer to molecular entities and compositions that do not produce an adverse, allergic or other untoward reaction when administered to an animal, or human, as appropriate. As used herein, "pharmaceutically acceptable carrier" includes any and all solvents, dispersion media, coatings, antibacterial and antifungal agents, isotonic and absorption delaying agents and the like. The use of such media and

> agents for pharmaceutical active substances is well known in the art. Except insofar as any conventional media or agent is incompatible with the active ingredients, its use in the therapeutic compositions is contemplated. Supplementary active ingredients, such as other anti-cancer agents, can also be incorporated into the compositions.

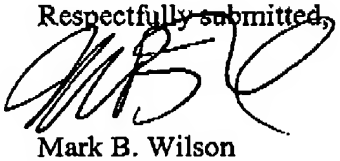
Based on this section, Applicants contend that claims 49 and 51 recite composition claims, wherein a substituted anthracycline of claim 1 or 17 (claims 49 and 51, respectively) is one of the components of the claimed composition.

Accordingly, Applicants respectfully request that the rejection of claims 49 and 51 as being indefinite under 35 U.S.C. § 112, second paragraph, be withdrawn.

H. Conclusion

Applicants believe that the present document is a full and complete response to the Office Action dated September 20, 2005. In conclusion, Applicants submits that in light of the foregoing remarks the present case is in condition for allowance and such favorable action is respectfully requested. The Examiner is invited to contact the undersigned Attorney at (512) 536-3035 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,



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